

## CLAIMS

### WHAT IS CLAIMED IS:

- 1           1. A power semiconductor module for mounting to a heat sink,  
2 comprising:
  - 3           a framelike housing having an interior and an exterior;
  - 4           a cap; and
  - 5           at least one electrically insulated substrate, disposed in said interior of said  
6 housing, which substrate includes an insulation body with a plurality of metal connection  
7 tracks located thereon and insulated from one another, power semiconductor  
8 components located on the connection tracks and electrically connected to said  
9 connection tracks, and terminal elements, leading to said exterior of said housing;  
10           wherein at least some of said terminal elements in said interior of said  
11 housing are formed by contact connectors that are disposed between connection tracks  
12 and contact points on a printed circuit board, and wherein said printed circuit board has  
13 conductor tracks which connect said contact points to contact elements leading to said  
14 exterior of said housing.
- 1           2. The power semiconductor module of claim 1, wherein  
2           said heat sink is also connected to said printed circuit board by at least  
3 one contact connector.
- 1           3. The power semiconductor module of claim 1, wherein  
2           said contact connectors are contact springs.

1           4. The power semiconductor module of claim 1, wherein  
2           said printed circuit board is disposed inside said power semiconductor  
3           module, between said substrate and said cap, and said printed circuit board includes  
4           contact elements which extend through both said printed circuit board and said cap.

1           5. The power semiconductor module of claim 1, wherein  
2           said printed circuit board is embedded in said cap.

1           6. The power semiconductor module of claim 1, wherein  
2           said printed circuit board is formed in said cap, with conductor tracks  
3           disposed on the inside of said cap, and wherein said power semiconductor module has  
4           contact elements extending through said cap.

1           7. The power semiconductor module of claim 1, wherein  
2           said contact elements are plug pin connectors.

1           8. The power semiconductor module of claim 1 wherein said contact  
2           elements are soldered eyelets.

1           9. The power semiconductor module of claim 1, wherein  
2           at least one substrate includes a sensor system component.

1           10. The power semiconductor module of claim 1, further comprising  
2           electronic components disposed on said printed circuit board and electrically connected  
3           to said connection tracks.

1           11. The power semiconductor module of claim 10, wherein  
2           said heat sink is also connected to said printed circuit board by at least  
3           one contact connector.

1           12. The power semiconductor module of claim 10, wherein  
2           said contact connectors are contact springs.

1           13. The power semiconductor module of claim 10, wherein  
2           said printed circuit board is disposed inside said power semiconductor  
3           module, between said substrate and said cap, and said printed circuit board includes  
4           contact elements which extend through both said printed circuit board and said cap.

1           14. The power semiconductor module of claim 10, wherein  
2           said printed circuit board is embedded in said cap.

1           15. The power semiconductor module of claim 10, wherein  
2           said printed circuit board is formed in said cap, with conductor tracks  
3           disposed on the inside of said cap, and wherein said power semiconductor module has  
4           contact elements extending through said cap.

1           16. The power semiconductor module of claim 10, wherein  
2           said contact elements are plug pin connectors.

1           17. The power semiconductor module of claim 10 wherein said contact  
2           elements are soldered eyelets.

- 1        18. The power semiconductor module of claim 10, wherein
- 2                  at least one substrate includes a sensor system component.